What is claimed is:

1. An ESD safe ceramic component formed of a sintered composition comprising:

a base material of a zirconia toughened alumina, comprising a primary component of Al_2O_3 and a secondary component comprising ZrO_2, wherein the ZrO_2 comprises tetragonal ZrO_2; and

a resistivity modifier to reduce an electrical resistivity of the base material.

2. The ESD safe ceramic component of claim 1, wherein the resistivity modifier is present in an amount within a range of about 5 to about 40 vol% with respect to the base material.

3. The ESD safe ceramic component of claim 2, wherein the resistivity modifier comprises a conductive particulate.

4. The ESD safe ceramic component of claim 3, wherein the conductive particulate comprises a material from the group consisting of oxides, carbides, nitrides, oxycarbides, oxynitrides, and oxycarbonitrides.

5. The ESD safe ceramic component of claim 4, wherein the conductive particulate is comprises a transition metal oxide.

6. The ESD safe ceramic component of claim 5, wherein the conductive particulate is selected from the group consisting of TiO_2, MnO_2, Fe_2O_3, CoO, NiO, SiC, Cr_2O_3, SnO_2, ZrC, $LaMnO_3$, BaO $6Fe_2O_3$, $LaCrO_3$, and $SrCrO_3$.

7. The ESD safe ceramic component of claim 5, wherein the transition metal oxide is selected from the group consisting of Fe_2O_3, TiO_2, and MnO_2.

8. The ESD safe ceramic component of claim 7, wherein the transition metal oxide is Fe_2O_3.

9. The ESD safe ceramic component of claim 1, wherein the primary component of the base material is present in an amount greater than the secondary component.

10. The ESD safe ceramic component of claim 9, wherein the base material comprises Al_2O_3 and ZrO_2 in a ratio not less than 55:45 based on volume percent.

11. The ESD safe ceramic component of claim 10, wherein said ratio is not less than 60:40.

12. The ESD safe ceramic component of claim 1, wherein the primary component forms a primary phase of the base material, and the secondary component forms a secondary phase that is dispersed within the primary phase.

13. The ESD safe ceramic component of claim 12, wherein the secondary component comprises mainly tetragonal ZrO_2.

14. The ESD safe ceramic component of claim 12, wherein the secondary component comprises at least 75 vol% tetragonal ZrO_2.

15. The ESD safe ceramic component of claim 14, wherein the secondary component comprises at least 85 vol% tetragonal ZrO_2.

16. The ESD safe ceramic component of claim 14, wherein the secondary component further includes at least one of cubic and monoclinic ZrO_2.

17. The ESD safe ceramic component of claim 1, wherein the ZrO_2 includes a stabilizer.

18. The ESD safe ceramic component of claim 17,wherein the stabilizer comprises at least on material from the group consisting of yttria, ceria, scandia.

19. The ESD safe ceramic component of claim 17, wherein the ZrO_2 is pre-alloyed with the stabilizer prior to sintering.

20. The ESD safe ceramic component of claim 1, wherein the ceramic has a Young's Modulus greater than about 230 GPa.

21. The ESD safe ceramic component of claim 1, wherein the component has a Vickers Hardness greater than about 13 GPa.

22. The ESD safe ceramic component of claim 1, wherein the component has a thermal expansion coefficient less than about $10.0 \times 10^{-6}K^{-1}$.

23. The ESD safe ceramic component of claim 1, wherein the component has a density at least 98% of theoretical density.

24. The ESD safe ceramic component of claim 23, wherein the component has a density at least 99% of theoretical density.

25. The ESD safe ceramic component of claim 24, wherein the component has a density at least 99.5% of theoretical density.

26. The ESD safe ceramic component of claim 1, wherein the component has an average grain size less than about 1.0 μm.

27. The ESD safe ceramic component of claim 1, wherein the component is selected from a group consisting of wire bonding tips, wire bonding capillaries, magneto-resistive handling tools, substrates, carriers, slicing tools, dicing tools, de-gluing carrier tools, pick and place tools, semiconductor device packaging tools, single and two step probes, and test sockets.

28. The ESD safe ceramic component of claim 1, wherein the component has a volume resistivity within a range of about 10^5 to about 10^{11} ohm-cm.

29. The ESD safe ceramic component of claim 1, wherein the component has a volume resistivity within a range of about 10^6 to about 10^9 ohm-cm.

30. The ESD safe ceramic component of claim 1, wherein the component has an L* greater than about 35.

31. The ESD safe ceramic component of claim 1, wherein the component has a coercive magnetic field Hc not greater than about 5 E4 A/m.

32. The ESD safe ceramic component of claim 1, wherein the component has a residual magnetic induction Mr of not greater than 10 Gauss.

33. An ESD safe ceramic bonding tool formed from a sintered composition comprising:

a base material of a zirconia toughened alumina, comprising a primary component of Al_2O_3 and a secondary component comprising ZrO_2, wherein the ZrO_2 comprises tetragonal ZrO_2; and

a resistivity modifier to reduce an electrical resistivity of the base material, the resistivity modifier comprising a transition metal oxide, wherein

the tool has a density not less than 98% of theoretical density, a volume resistivity within a range of about 10^6 to about 10^9 ohm-cm.

34. The tool of claim 33, bonding tool has a tip portion that is textured for gripping a workpiece.

35. The tool of claim 34, bonding tool further comprises an ultrasonic generator for vibrating the tip portion.

36. A method of forming an ESD safe ceramic component, comprising:

densifying a ceramic body by heat treating, the ceramic body comprising (i) a base material of a zirconia toughened alumina, the base material comprising a primary component of Al_2O_3 and a secondary component of ZrO_2, wherein the ZrO_2 comprises tetragonal ZrO_2, and (ii) a resistivity modifier to reduce an electrical resistivity of the base material, wherein heat treating is carried out at a temperature less than about 1400 °C.

37. The method of claim 36, wherein the heat treating is carried out by a method selected from pressureless sintering pressure sintering, or a combination thereof.

38. The method of claim 37, wherein heat treating includes pressure sintering, pressure sintering being carried out by hot isostatic pressing (HIPing).

39. The method of claim 36, wherein the temperature is not greater than about 1350 °C.

40. A method of forming an ESD safe ceramic component, comprising:

mixing together a base material and a resistivity modifier, the base material comprising Al_2O_3 and ZrO_2, wherein the ZrO_2 comprises partially stabilized tetragonal ZrO_2 and contains a stabilizer such that the ZrO_2 is pre-alloyed;

forming a ceramic body comprising the mixture of the base material and the resistivity modifier, the ZrO_2 containing the stabilizer prior to forming the ceramic body; and

sintering the ceramic body.

41. A method of forming an ESD safe ceramic component, comprising:

sintering a ceramic body comprising (i) a base material of a zirconia toughened alumina, the base material comprising a primary phase of Al_2O_3 and a secondary phase of ZrO_2, wherein the ZrO_2 comprises tetragonal ZrO_2, and (ii) a resistivity modifier to reduce an electrical resistivity of the base material, to form a densified body; and

adjusting a resistivity of the densified body by annealing.

42. The method of claim 41, wherein annealing is carried out in an oxygen containing environment or in an inert gas environment.

43. The method of claim 41, wherein annealing is carried out at a temperature within a range of about 600 °C to about 1200 °C.

44. A method of forming a ceramic component, comprising:

hot isostatic pressing (HIPing) a ceramic body in a HIPing environment, the ceramic component being provided in a localized environment

containing a processing gas species having a partial pressure greater than the processing gas species in the HIPing environment.

45. The method of claim 44, wherein the HIPing environment contains a noble gas, and the localized environment comprises oxygen, wherein the localized environment is oxygen-rich relative to the HIPing environment.

46. The method of claim 44, wherein component is provided in a crucible containing processing gas source, the crucible defining a volume that is the localized environment.

47. The method of claim 46, wherein the crucible is configured to attenuate gas flow therethrough.

48. The method of claim 47, wherein the crucible has a single opening during HIPing.

49. The method of claim 46, wherein the processing gas source comprises a powder.

50. The method of claim 49, wherein the component is embedded in the powder.

51. The method of claim 44, wherein the ceramic component is an ESD safe ceramic component comprising a base material and a resistivity modifier to reduce an electrical resistivity of the base material.

52. The method of claim 44, wherein the ceramic component is comprised of at least one material from the group consisting of ferrites, varistors, CeO_2, TiO_2, Ce-TZP, PZT (PbO-ZrO2-TiO3), PMN (PbO-MnO-NbO3), PLZT, $BaTiO_3$, $SrTiO_3$.

53. The method of claim 51, wherein the component is provided in a crucible during HIPing, the crucible containing processing gas source.

54. The method of claim 53, wherein the processing gas source comprises a material that is more easily reduced than the resistivity modifier.

55. The method of claim 44, wherein material of a zirconia toughened alumina, comprising a primary component of Al_2O_3 and a secondary component of ZrO_2, wherein the ZrO_2 is comprised mostly of tetragonal ZrO_2.

56. The method of claim 44, wherein the processing gas species has a partial pressure that is not less than about 0.1 atm in the localized environment.

57. The method of claim 44, wherein the processing gas species has a partial pressure that is not less than about 0.5 atm in the localized environment.

58. The method of claim 44, wherein the processing gas species is oxygen, the localized environment having a greater than an equilibrium oxygen partial pressure of the HIPing environment.

59. The method of claim 44, wherein the ceramic component is a rod.

60. The method of claim 44, wherein the rod has an aspect ratio greater than about 5:1.

61. A method of bonding a microelectronic device, comprising:

contacting the device with a bonding tool formed of a sintered composition comprising (i) a base material of a zirconia toughened alumina that comprises a primary component of Al_2O_3 and a secondary component of ZrO_2, wherein the ZrO_2 comprises tetragonal ZrO_2, and (ii) a resistivity modifier to reduce an electrical resistivity of the base material, the resistivity modifier comprising a transition metal oxide; and

biasing the tool to effect bonding of the microelectronic device.

62. The method of claim 61, wherein biasing is carried out by vibrating using ultrasonic waves.

63. The method of claim 61, wherein the microelectronic device includes a wire to be bonded to a contact, the bonding being carried out to bond the wire to the contact.

64. The method of claim 61, wherein the bonding tool has a ESD characteristic such that a 1000V on the device is dissipated in less than 500 ms to about 100 V.